

# ANIMAL-SHAPED TOYS AS THERAPEUTIC TOOLS FOR PATIENTS WITH SEVERE DEMENTIA

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**Abstract**—An animal-shaped toy was provided as a therapeutic tool to patients with severe dementia during a therapeutic program and after dinner. The occupational therapist delivered three animal-shaped toys—a gorilla, a tiger and a dog—during the therapeutic program. These toys performed amusing actions. The occupational therapist observed the activities of the patients and classified them into six categories (no reaction, close observation, talking, clapping, patting the toy, taking care of the toy). The total duration of activities during the period of the therapeutic program was recorded. Most of the patients were interested in the toys, and they looked much happier and less agitated. They became accustomed to the toy dog day by day. The animal-shaped toy is a useful tool for occupational therapy.

**Keywords** - Therapeutic tool, diversional therapy, toy

## I. INTRODUCTION

Pet therapy has been used to heal the dementia patients [1-4]. Dogs are one of the most popular companion animals, but there are some risks: hazards for the dog, hazards for the patient, sensory overload, dislike of the pet, and so on. On the other hand, a few animal-shaped toys based on robot technology have been developed. Doll therapy has also been applied as a diversional therapy for dementia patients in Australia [5]. In this study, we tried providing animal-shaped toys as a diversional therapy for patients with severe dementia, to decrease the frequency of their agitation and wandering.

## II. METHOD

Occupational therapy was administered during daytime working hours in Green Home, a nursing home for elderly patients with severe dementia. Formal approval for the study was obtained from the Ethics Committee of the Fujimoto-Hayasuzu Hospital before the toys were delivered to the patients.

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### A. Comparison of toys

Three animal-shaped toys were prepared as tools for the therapeutic program. Fig. 1 is a photo of the toys: a gorilla, a tiger and a dog. Each toy performed amusing dancing, jumping and walking actions. During the therapeutic program, the occupational therapist (OTR) showed the three toys for 90 seconds each to a small group of three or four patients. The OTR observed the patients' activities and classified them into six categories (no reaction, close observation, talking, clapping, patting the toy, taking care of the toy). The total number and duration of activities during the period of the therapeutic program were recorded.

### B. Delivery of toy dog after dinner

After dinner, patients with severe dementia generally become agitated or wander. We expected a decrease in the frequency of agitation and wandering after using the toy dog, which was the most popular animal. A whistle that caused the dog to bark was removed for the convenience of the care staff. The patients came to the main lounge after dinner. The OTR delivered two toy dogs to the main lounge for 40 minutes. The OTR then observed the patients' activities for one hour and classified them into four categories (no reaction, agitation or wandering, showing interest in something, communicating with other residents). The toy dogs were delivered for six days in total. As a reference, the after-dinner activities of patients without the delivery of the toy dogs were observed for four days in total.

### C. Individual activity analysis

The most active patient (67 years, female, Mini-Mental State = 14) was selected for a study to determine the therapeutic efficiency of the toy dog. The OTR analyzed her activities in detail and classified them into five categories (pleasant activity, unpleasant activity, no reaction, wandering, communicating with other residents). The patient's activities were observed for three successive days, with and without delivery of the toy dog.

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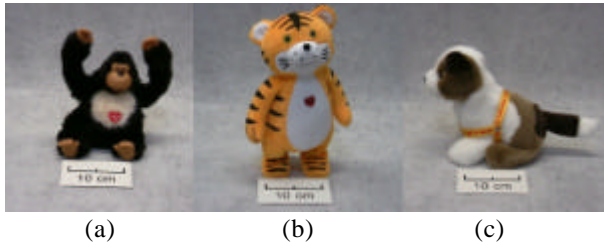


Fig. 1. Animal-shaped toys as therapeutic tools:  
(a) gorilla (b) tiger (c) dog.

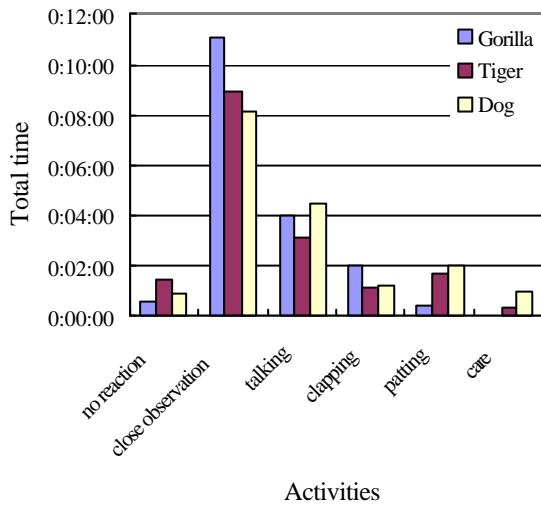


Fig. 2. Comparison of patients' activities when presented with three animal-shaped toys.

### III. RESULTS

#### A. Comparison of toys

The activities of patients are summarized in Fig. 2. Although no significant differences were observed between responses to the three different toys, the total time spent in active behavior (talk, pat and take care of the toy) was relatively longer with the toy dog. A longer total time was spent in look, talk and clap with the toy gorilla.

#### B. Delivery of toy dog after dinner

Fig. 3 shows the average number of participants. About 20 participants came to the main lounge every day. Of these, about 10 participants showed no reaction and a few participants wandered or were agitated during this period. The average number of participants showing no reaction was

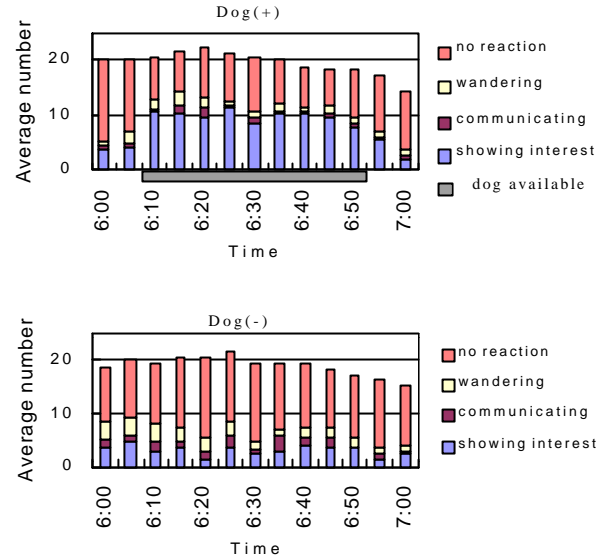


Fig. 3. Average number of participants in the activities in the main lounge after dinner.

decreased, and the average number showing interest was increased by the delivery of the toy dog. A few participants fended off the toy dog.

#### C. Individual activity analysis

Fig. 4 shows the results from three successive days with and without delivery of the toy dog. Without the delivery, the main activities were wandering, communicating with other residents and no reaction. Pleasant activity was increased by the appearance of the dog on 7 June, but the total duration of pleasant activity decreased day by day. There was little wandering.

### IV. DISCUSSION

We tried providing animal-shaped toys as a diversional therapy for patients with severe dementia. In this study, no significant differences were observed between responses to the three different toys, although patients were more familiar with the dog shape than with the gorilla or the tiger shapes, and they wondered about, or were afraid of, the amusing actions of the toy gorilla and tiger.

Most of the patients were interested in the toy dog after dinner, and they looked much happier and less agitated, although a few fended off from it. We noticed that the patients became accustomed to the toy dog day by day (see Fig. 4). Although the therapeutic program requires improvement, for instance regarding the accommodation of groups and the frequency of delivery, the toy dog was a

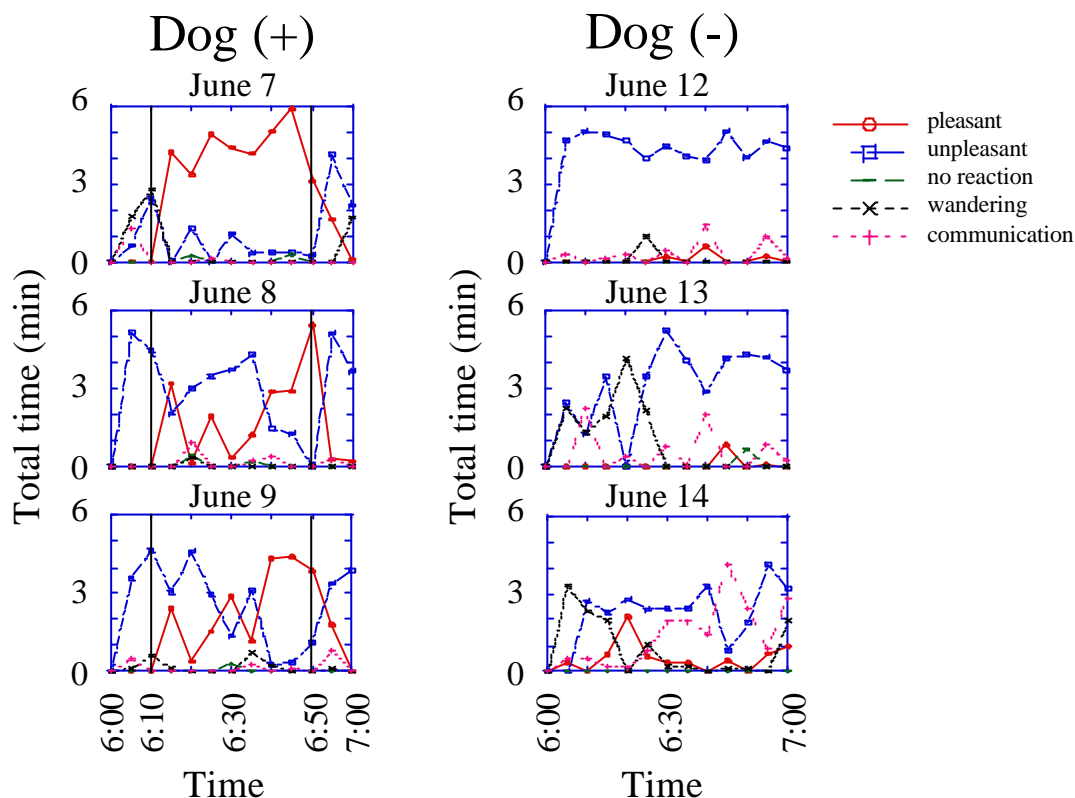


Fig. 4 Total time of the activities of a patient (female, 67 years) for three successive days, with and without delivery of a toy dog.

useful therapeutic tool for patients with severe dementia. Pet therapy is popular, although some risks associated with animal behavior cannot be avoided. On the other hand, these toys are safe, clean and offer the same quality to all patients. Moreover, the toys are relatively inexpensive. Since patient activity varied according to the delivery of the toys, further evaluation is required.

#### V. CONCLUSION

Animal-shaped toys (a gorilla, a tiger and a dog) were provided as therapeutic tools to patients with severe dementia. The occupational therapist observed the patients' activities. The total time spent in various kinds of activity was recorded. Most of the patients were interested in the toys,

and they looked much happier and less agitated. They became accustomed to the toys day by day.

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